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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,860	08/17/2001	Craig M. Carpenter	4880US (01-0170)	6588

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EXAMINER

ZERVIGON, RUDY

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 12/19/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,860

Applicant(s)

CARPENTER ET AL.

Examiner

Rudy Zervigon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 14-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-13, drawn to a deposition chamber, classified in class 118, subclass 715.
 - II. Claims 14-29, drawn to a feedthrough device, classified in class 118, subclass 715.
 - III. Claims 30-37, drawn to a method of converting a chemical vapor deposition chamber, classified in class 427, subclass 588.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the feedthrough device positioned in the chamber does not require the particulars of the feedthrough device as claimed in the subcombination where the feedthrough device may be positioned outside the chamber. The subcombination has separate utility such as a feedthrough in an etching chamber.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

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4. Inventions I/II and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process as claimed can be practiced by another materially different apparatus that is not an atomic layer deposition apparatus but may be an aggregate layer deposition apparatus such as a plasma spray deposition apparatus.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Bradley B. Jensen on December 11, 2002 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-13. Affirmation of this election must be made by applicant in replying to this Office action. Claims 14-37 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected inventions.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

8. The drawings are objected to under 37 CFR 1.83(a) because they fail to show heating device 238 (Section [0034]) as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 requires “the resistance heater is position of within the”. Correction is required.

11. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 requires a conductive sheathing but does not state whether the conductivity is thermal or electrical.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Sajoto et al (USPat. 6,056,823). Sajoto teaches a deposition chamber (12, Figure 2; column 4, lines 45-67) including:

- i. A chamber body (12) having a cavity (55, 20; Figure 3A, column 6, lines 45-65) formed therein
- ii. A chamber lid (14, Figure 2; column 4, lines 45-67) configured to enclose the cavity (Figure 2)
- iii. A vapor delivery head (26, Figure 2; column 5, lines 23-35) positioned within the cavity
- iv. A feedthrough device (40, Figure 3A; column 6, lines 12-44) positioned in the chamber including a lumen (42/44 passage) as a longitudinal body, the feedthrough device being configured to receive vapor from a vapor source and transfer the vapor therethrough along a pathway (42, 44; Figure 2, 3A; column 5, line 65 – column 6, line 11) toward the vapor delivery head
- v. A resistance (“power lead 67”; column 6, lines 37-44) heating device (64, Figure 3A; column 6, lines 30-44) associated with the feedthrough device
- vi. The heating device includes the resistance heater wherein at least a portion of the resistance heater is positioned within the continual helical groove (62/64 interface) of the feedthrough device – The heater wires are shown in Figure 3A as staggered vertically in cross section

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which is a helical structure. As shown in Figure 3A, the continual helical groove is configured to complementarily receive the resistance heater (64)

- vii. The resistance heater further includes a pair of electrical resistance leads – terminal portion of 67, Figure 3A,

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sajoto et al (USPat. 6,056,823) in view of Whitney (USPat. 4,638,150). Sajoto is discussed above. Sajoto further teaches electrical resistance leads (64, Figure 3A) shown to wind along the feedthrough. Sajoto also further shows (Figure 3A) that his heater (64) is formed into a helical pattern complementary with a continual helical groove.

Sajato does not teach:

- i. Electrical resistance leads having at least a portion thereof disposed within a stainless steel conductive sheathing
- ii. The heating device further includes a thermocouple positioned within the conductive sheathing
- iii. That his heater is either adhered or welded to the feedthrough device

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Whitney teaches a flexible wire heater device (30, Figure 4; column 2, line 42 – column 3, line 5) including:

- iv. Electrical resistance leads (40; Figure 4; column 5, lines 19-35) having at least a portion thereof disposed within a stainless steel conductive sheathing (46; Figure 4; column 5, lines 19-35)
- v. The heating device further includes a thermocouple (“PTC component 14”, “temperature-responsive component 14”; column 4, lines 54-68) positioned within the conductive sheathing to form a “self-limiting” heater (column 4, lines 39-40)

Whitney et al does not specify how his conductive sheathing is formed. However, it is well established that in product-by-process claims (MPEP 2113), the patentability of a product (“sheathing”) does not depend on its method of production (“cold formed”). If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Sajoto’s heater with Whitney’s heater by either adhering or welding Whitney’s heater to Sajoto’s feedthrough device.

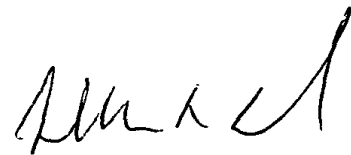
Motivation to replace Sajoto’s heater with Whitney’s heater by either adhering or welding Whitney’s heater to Sajoto’s feedthrough device is to provide a heater with a temperature-responsive component to limit elevated temperatures as taught by Whitney (column 2, line 64 – column 3, line 2).

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Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPat. 6,021,582; 6,143,077; 5,110,407; 5,496,410; 5,753,891; 5,455,014; 5,616,208; 5,595,606; 6,159,298.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (703) 305-1351. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official after final fax phone number for the 1763 art unit is (703) 872-9311. The official before final fax phone number for the 1763 art unit is (703) 872-9310. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (703) 308-0661. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (703) 308-1633.



JEFFRIE R. LUND
PRIMARY EXAMINER